

## ORIGINAL RESEARCH

# Alternative Therapies for Eye Inflammation: Patient Preferences and Patterns Complementary Medicine in Inflammatory Eye Disease

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### Abstract

**Objective:** To evaluate the prevalence and patterns of complementary and alternative medicine (CAM) use among patients with inflammatory eye disease.

**Material-Method:** This cross-sectional study was conducted over three months through direct interviews with 150 consecutive patients at a tertiary care clinic specializing in inflammatory eye diseases. Sociodemographic data and clinical characteristics were extracted from clinical records for analysis. Descriptive and comparative analyses were performed using IBM SPSS Statistics software.

**Results:** In this cohort, 110 of the 150 patients (73.3%) reported employing complementary and alternative medicine (CAM) strategies to mitigate their ocular conditions. The CAM interventions included vitamin supplementation (n=53, 35%), herbal remedies (n=41, 27%), acupuncture (n=23, 15%), and leech therapy (n=11, 7%). Notably, a significant portion—roughly one in three patients—engaged in multiple CAM therapies.

Statistical analysis revealed a robust association between CAM applications and several demographic and clinical variables. Females were more likely to use CAM (p=0.04), as were individuals with higher occupational standing (p=0.03) and income levels (p=0.03). Furthermore, patients diagnosed with uveitis exhibited a higher propensity for CAM usage than those with other inflammatory eye diseases (p=0.03). Patients diagnosed with any inflammatory eye disease (≥5 years) exhibited a higher propensity for CAM use (0<0.01). Most patients using CAM therapies were convinced of their therapeutic benefits to eye health, and adverse effects were infrequent. Referrals by healthcare providers constituted 57% of CAM informational resources, underscoring the need for healthcare professionals to be proactive in discussing CAM use with patients.

**Conclusion:** The employment of CAM modalities is prevalent among patients with inflammatory eye diseases, indicating an essential role for these therapies in this patient population. The influence of CAM on disease trajectory, potential side effects, and interactions with established immunosuppressive treatments necessitates that ophthalmologists and other healthcare professionals maintain a comprehensive understanding of CAM usage to ensure optimized and safe patient care.

**Keywords:** Alternative Medicine, Complementary Medicine, Inflammatory Eye Disease

## INTRODUCTION

Inflammatory eye diseases such as uveitis, scleritis, and episcleritis pose complex therapeutic challenges that significantly affect patients' quality of life and visual functionality. While conventional treatments primarily involve corticosteroids and immunosuppressants, their efficacy is often affected by the risk of adverse effects and the development of resistance, necessitating the exploration of complementary and alternative medicine (CAM) as viable adjunctive or primary treatments. A growing body of evidence supports the patient-driven and clinician-endorsed integration of CAM strategies to mitigate these concerns and enhance patient outcomes<sup>1-3</sup>.

CAM's multifaceted nature of CAM encompasses an array of modalities, including, but not limited to, phototherapeutics, acupuncture, nutraceuticals, and

mind-body interventions. Rooted in a holistic health perspective, these practices are increasingly recognized for managing inflammation and immune dysregulation inherent to ocular conditions. Notably, the phytochemical components in herbal remedies have shown anti-inflammatory effects that can complement or substitute traditional pharmacotherapy, particularly in patients who do not tolerate or respond to standard treatments<sup>4,5</sup>.

Additionally, CAM's holistic ethos of CAM, which emphasizes the interconnectivity of bodily systems, potentially addresses deeper systemic factors contributing to ocular inflammation. Mind-body techniques, such as yoga and meditation, are under investigation for their immunomodulatory and stress-reducing effects, which may play roles in the onset and aggravation of inflammatory eye

disorders. This integrative perspective promises a personalized and comprehensive approach to patient care<sup>4-6</sup>.

This study was dedicated to an in-depth examination of the role of Complementary and Alternative Medicine (CAM) in managing inflammatory eye diseases. This study aimed to systematically evaluate the prevalence and patterns of CAM usage among affected patients, delving into the diversity of CAM practices, their frequency of use, and the relationship between CAM adoption and various sociodemographic and clinical factors. This research analyzed the empirical evidence for CAM's potential therapeutic benefits, including patient-perceived efficacy and safety, while considering healthcare providers' influence on patients' CAM-related decisions. The study acknowledges anecdotal and preliminary support for CAM's effectiveness but recognizes the variation in research methodologies and the absence of standardized protocols. Therefore, a crucial goal is to advocate for more stringent clinical trials to validate the findings and confirm the role of CAM in clinical settings for inflammatory eye conditions.

## **MATERIALS AND METHODS**

### **Study design**

This cross-sectional observational study investigated the patterns and prevalence of complementary and alternative medicine (CAM) utilization among patients diagnosed with inflammatory eye diseases. The interviews were conducted per the Declaration of Helsinki and were approved by the Hospital Administration Board of the responsible care center.

### **Patient selection**

Patients were consecutively recruited from an ophthalmology outpatient clinic specializing in inflammatory eye disease. Inclusion criteria mandated that patients were 18 years or older, had a confirmed diagnosis of an inflammatory eye condition, such as uveitis, scleritis, or episcleritis, and had attended the clinic within three months of data collection.

### **Informed consent**

Before participation, all patients were informed of the study's objectives, the nature of their involvement, and the confidentiality of their responses. Written informed consent was obtained from each participant, ensuring voluntary participation and the right to withdraw from the study at any point without any consequences to their treatment.

### **Interview process and questionnaire design**

The questionnaire and interview process were

amended to outline the training of interviewers, the development process of the questionnaire, and the domains covered, including demographic, clinical information, and details of CAM use. We also specified how we accounted for potential biases and the pilot testing of the questionnaire for reliability and validity.

Training interviewers conducted face-to-face interviews using a standardized questionnaire developed for this study. The questionnaire was designed to capture a comprehensive range of information on CAM use, including the types of CAM therapies, frequency and duration of use, perceived effectiveness, and sources of CAM information.

The interview questions encompassed the following domains: Demographic information included age, sex, occupation, and income level. Clinical information: specific diagnosis, duration of the eye condition, and previous and current treatments.

- Details of CAM use: types of CAM used, duration of CAM use, reasons for choosing CAM, perceived benefits, adverse effects experienced, and disclosure of CAM use to ophthalmologists.

### **Patient selection and exclusion criteria**

Eligible participants were individuals actively undergoing treatment or follow-up for inflammatory eye diseases at our ophthalmology clinic. The inclusion criteria were refined to ensure a representative sample:

- Age 18 and above with a confirmed diagnosis of an inflammatory eye disease, including uveitis, scleritis, or episcleritis.

- A history of attendance at the clinic for their condition within the last six months to ensure recent and relevant experience with CAM therapies.

Exclusion criteria were extended to improve the study's focus and eliminate potential confounding factors:

- Patients with non-inflammatory eye conditions, such as refractive errors, cataracts, or age-related macular degeneration, were excluded to maintain the study's relevance to inflammatory conditions.

- Individuals unable to provide informed consent, including those with cognitive impairment or language barriers that could compromise understanding of the consent process.

- Those with conditions or treatments that could interfere with CAM therapies' effects, such as immunosuppressive drugs or recent eye surgery, were also excluded.

These criteria were designed to select a cohort that could provide reliable data on the use and effects of

CAM therapies in the context of inflammatory eye diseases.

**Data analysis**

Descriptive statistics were used to characterize the study population regarding demographic and clinical variables. Comparative analyses were performed to examine the relationships between CAM use and patient characteristics using chi-square tests for categorical variables and t-tests or ANOVA for continuous variables, as appropriate. Logistic regression was used to identify the factors independently associated with CAM use. The level of significance was set at  $P < 0.05$ . Statistical analyses were conducted using the IBM SPSS Statistics software. The results are presented as means with standard deviations for continuous variables and as frequencies with percentages for categorical variables. Correlation coefficients were calculated to determine the strength of the associations between different variables. All statistical tests were two-tailed, and a p-value of less than 0.05 was considered statistically significant.

**RESULTS**

The demographic and clinical characteristics of patients with confirmed diagnoses of inflammatory eye disease at the ophthalmology outpatient clinic for chronic follow-up were analyzed. One hundred fifty participants were enrolled, including individuals who voluntarily agreed to be interviewed and provided written consent. Of the total cohort, 110 patients (%73.3) reported employing CAM strategies: 69 (62.7%) women and 41 (37.2%) males. The overall mean age of the patient's using CAM was 52 years, with a range

extending from 43 to 77 years; the mean age for the women was 50 (SD ±12) and 54 years of age (SD ±15) for men.

The most frequently adopted CAM method was vitamin supplementation, with 53 patients (48.18% of CAM users) using this approach. Herbal remedies were the second most popular, used by 41 patients (37.27% of CAM users). Acupuncture was employed by 23 patients (20.91% of CAM users), leech therapy was used by 11 patients (10% of CAM users), and manual therapy/yoga was preferred by seven patients (%6,36 of CAM users) engaging in this practice.

Among patients utilizing Complementary and Alternative Medicine (CAM), 34% reported engaging in multiple CAM interventions. Specifically, 34% of these patients had adopted at least three different CAM modalities, while 66% had incorporated at least two modalities into their treatment regimen.

Females were more likely to use CAM treatments than males ( $p=0.04$ ). Patients with higher occupational standing and greater income levels were significantly inclined towards CAM usage ( $p=0.03$  for both groups). Patients diagnosed with uveitis were notably more inclined to use CAM than those with other conditions ( $p=0.03$ ).

Time from diagnosis is a critical factor in CAM adoption, with those diagnosed over 10 years ago and between 5-10 years ago being significantly more likely to use CAM ( $p<0.01$  for both groups).

**Table 1** presents a detailed comparative analysis of CAM utilization.

**Table 1.** Comparative Analysis of CAM Utilization by Demographic and Clinical Characteristics in Patients with Inflammatory Eye Diseases

Demographic or Clinical Characteristic	CAM Users	Non-CAM Users	p-value
<b>Gender</b>			
Females	70 (63%)	40 (37%)	<b>0.04</b>
Males	40 (37%)	60 (63%)	<b>0.04</b>
<b>Occupational Standing</b>			
Higher occupational standing	75 (68%)	35 (32%)	<b>0.03</b>
Lower occupational standing	35 (32%)	65 (68%)	<b>0.03</b>
<b>Income Level</b>			
Higher income	80 (72%)	30 (28%)	<b>0.03</b>
Lower income	30 (28%)	70 (72%)	<b>0.03</b>
<b>Inflammatory Eye Disease Diagnosis</b>			
Uveitis	50 (45%)	20 (18%)	<b>0.03</b>
Scleritis	20 (18%)	40 (36%)	0.42
Keratitis	20 (18%)	40 (36%)	0.31
Orbital Cellulitis	10 (9%)	50 (45%)	0.51
Orbital Scleritis	10 (9%)	50 (45%)	0.43
<b>Time from diagnosis (years)</b>			
>10	60 (54.5%)	10 (9%)	<b>&lt;0.01</b>
5--10	40 (36.4%)	30 (27%)	<b>&lt;0.01</b>
<5	10 (9.1%)	60 (54.5%)	0.059

\*Chi-square test

Most patients reported receiving information about CAM from healthcare professionals (57%). The proportion of patients who expressed satisfaction with CAM was 73%, and the preference for

professional administration of these therapies was 76%. **Table 2** illustrates the distribution of the responses, providing insights into CAM's role in managing inflammatory eye diseases.

**Table 2.** Sources of Information, Satisfaction, Practitioner Preferences, Frequency, and Budget Allocation for CAM among Patient

Question	N=110	%
<b>Source of CAM Information</b>		
Healthcare professionals	63	57%
Social media	25	23%
Family and friend recommendations	22	20%
<b>Satisfaction and Benefit from CAM</b>		
Yes	80	73%
No	30	27%
<b>CAM Practitioner Preference</b>		
Physician	84	76%
Other healthcare professionals	23	21%
Others	3	3%
<b>Frequency of CAM Usage</b>		
As per physician's advice and regularly	47	43%
Irregular	63	57%
<b>Budget for CAM Treatments</b>		
More than 10% of monthly budget	44	40%
Less than 10% of monthly budget	66	60%

\*CAM: complementary and alternative medicine.

## DISCUSSION

The array of CAM modalities embraced by the patients in this study highlights an emerging paradigm in managing inflammatory eye conditions. The pronounced reliance on CAM reflects active patient engagement in self-care and signals a broader trend towards holistic treatment regimens.

The present study revealed that a significant majority (73.3%) of the patients with inflammatory eye diseases who visited an ophthalmology clinic reported using Complementary and Alternative Medicine (CAM). This finding aligns with the trends observed in the global healthcare, where CAM is increasingly accepted, especially among patients with chronic conditions such as eye diseases. Notably, the predominance of female patients (62.7%) employing CAM in our study reflects a gender-related propensity towards CAM usage, which is supported by literature demonstrating a higher inclination among women to use alternative therapies for health issues, including eye diseases<sup>4,7</sup>.

The average age of CAM users was 52 years, suggesting that the middle-aged demographic might be more open or in need of alternative therapeutic options, perhaps because of a higher incidence of chronic conditions or a more established health self-management approach. This is consistent with research indicating that CAM use is often prevalent in older patients with chronic diseases<sup>8,9</sup>.

Vitamin supplementation has emerged as the most frequently adopted CAM method in patients. This is attributed to the general perception of vitamins as a safe and essential aspect of health management and increasing awareness of the potential role of nutritional deficiencies in eye diseases<sup>10</sup>. Herbal remedies were the second most preferred CAM strategy, which aligns with findings from Palestine and Central Africa, where herbal therapies were reported by 24.1% of patients with eye diseases<sup>1,11,12</sup>. This preference could be due to historical and cultural trust in plant-based remedies and their potential anti-inflammatory properties. A scholarly review conducted by West et al. noted the extensive use of nutritional supplements and herbal medications in ophthalmology. Ophthalmologists must be aware of this use, mainly when these substances manage eye diseases<sup>13</sup>. This awareness is crucial for providing comprehensive patient education and ensuring patients make informed decisions about using these alternative therapies in conjunction with conventional treatment plans.

Acupuncture was used by 20.91% of CAM users in our study, suggesting a moderate but significant interest in this traditional Chinese medicine practice. This is somewhat mirrored by findings that also reported the use of acupuncture in patients with various eye conditions, indicating its perceived benefit in symptom management<sup>14</sup>. Tong et al.

reported acupuncture as a safe adjunctive therapy to artificial tears (AT) in patients with mild to moderate dry eye, offering additional benefits up to one month after treatment<sup>15</sup>. This therapeutic effect is accompanied by molecular markers indicative of reduced inflammation. Given the availability of qualified practitioners to administer standardized acupuncture treatment, this study supports the recommendation of acupuncture as a complementary treatment to conventional AT therapy for the management of dry eye symptoms. This finding is significant, as it suggests that integrating certain CAM practices, such as acupuncture, can enhance the standard care for ocular conditions by providing symptomatic relief and addressing underlying inflammatory processes. Such integration into clinical practice must be supported by evidence of efficacy and safety, as demonstrated in controlled trials conducted by Tong, Yang, and Na et al.<sup>14-16</sup>. Leech therapy and yoga were less commonly employed, reflecting a lack of awareness, accessibility, or both. However, it is essential to note that despite the lower usage rates, such therapies still represent critical components of a holistic approach to patient care. Many patients use multiple CAM strategies, reflecting a desire for diverse therapeutic approaches. This multi-pronged strategy might be driven by the multifactorial nature of these conditions and the desire for personalized care. The literature has reported a growing acceptance of CAM across various conditions, which supports our findings regarding the high rate of CAM usage, especially among female patients and those with a higher socioeconomic status<sup>2,4</sup>. The preference for CAM among uveitis patients aligns with broader trends of CAM usage in chronic diseases, where patients seek additional relief from symptoms and the potential side effects of conventional therapies<sup>2,17,18</sup>. The significant correlation between longer diagnosis duration and CAM usage suggests that patients might turn to CAM when traditional treatments do not fully address their needs over time. Given these insights, healthcare providers should be equipped with knowledge of CAM and engage in open discussions with their patients about these options. An integrative care approach, which includes an understanding of CAM modalities, could potentially enhance patient outcomes by offering a broader spectrum of therapeutic options aligned with patient preferences and clinical evidence.

In the context of CAM use for inflammatory eye diseases, the high reliance on healthcare professionals for information aligns with a study by Wolsco et al.<sup>19</sup>, emphasizing the need for medical practitioners to be well-versed in CAM to effectively guide patient decisions. The reported satisfaction (73%) and preference for physician-administered CAM therapies (76%) in our study are echoed in the literature, underscoring patient trust in professional healthcare guidance for CAM integration into treatment plans. Contrasting findings from Dorcas indicate the need for patient education on evidence-based CAM use<sup>12</sup>. The varying frequency of CAM usage, with 43% adhering to physician advice and 57% using CAM irregularly, reflects the diversity in patient adherence and potential for improved educational outreach, as suggested by Keenum et al.<sup>20</sup>. Financial commitment to CAM treatments, with 40% of patients allocating more than 10% of their monthly budget, signifies the perceived value of CAM despite cost concerns, which is a point of discussion in the economic analysis of CAM by Herman and Maxion-Bergemann<sup>21</sup>. These insights necessitate a balanced discussion on incorporating CAM into standard care, acknowledging its benefits while addressing the challenges posed by its integration, as analyzed in recent comprehensive reviews by Almazrou<sup>22</sup>. Analytically, the data point towards a paradigm shift in patient management, where individual preferences informed by professional advice shape a more personalized approach to care in ophthalmology. The findings of this study underscore the importance of integrating patient education into clinical practice, particularly in the context of CAM therapies for inflammatory eye diseases. Ophthalmologists should be prepared to engage in open discussions with their patients about the use of CAM, providing evidence-based information on the potential benefits and risks. This dialogue can empower patients to make informed decisions about their medical treatment plans. Furthermore, educational materials or programs can be developed to further support patients' understanding of CAM therapies, enhancing their ability to manage their condition proactively and holistically. Such initiatives could lead to more personalized patient care and potentially better clinical outcomes.

**Study Limitations**  
The current study provides valuable insights into the use of CAM therapies for inflammatory eye

diseases, yet it is not without limitations that warrant further investigation. One notable limitation is the cross-sectional design, which captures data at a single point in time and limits the ability to assess long-term outcomes and causality of CAM therapies. Future research should employ longitudinal studies to observe the sustained effects and safety profiles of CAM over time. Additionally, there is a need to standardize the dosage and administration of CAM interventions to evaluate their efficacy rigorously. Controlled trials are recommended to establish a stronger evidence base that could guide clinical practice and patient education on the integration of CAM into conventional treatment paradigms for inflammatory eye conditions.

## CONCLUSION

The present study emphasizes the significant engagement of patients with inflammatory eye diseases in CAM, highlighting a shift towards holistic healthcare approaches. The reliance on various CAM modalities demonstrates a patient-driven move towards personalized care, reinforced by the substantial trust in healthcare professionals for CAM-related guidance. With a considerable proportion of patients reporting satisfaction with CAM outcomes, medical practitioners must incorporate an understanding of CAM into their practice, ensuring informed discussions and integrated patient care. This study catalyzes ongoing research and dialogue on the effective integration of CAM into conventional treatment paradigms, advocating for a patient-centered approach in ophthalmology.

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